

**Stage 2 Data Validation Memorandum**  
**Norfolk Southern East Palestine Train Derailment Site**  
**East Palestine, Ohio**  
**Aqueous Samples**  
**Sample Delivery Group: 240-181640-1**  
**Report Date: March 16, 2023**

This quality assurance (QA) review is based upon an examination of the data generated from the analyses of three aqueous samples and one aqueous blank collected on March 9, 2023, at the Norfolk Southern East Palestine Train Derailment Site in East Palestine, Ohio. These samples were analyzed by Eurofins Environment Testing North Central, LLC (Eurofins) of Barberton, Ohio, for volatile organic compounds (VOCs) by SW-846 Method 8260D and for semivolatile organic compounds (SVOCs) by SW-846 Method 8270E.

This review was performed in accordance with the East Palestine, Ohio Derailment, Initial Groundwater Well Installation and Sampling Plan, (Draft, ARCADIS, February 2023) and for compliance with the above referenced analytical methods. This review was performed with guidance from the National Functional Guidelines for Organic Data Review (US EPA). These validation guidance documents specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods and are not completely applicable to the type of analyses and analytical protocols performed for the SW-846 methods utilized by the laboratory for these samples. Environmental Standards, Inc. (Environmental Standards) used professional judgment to determine the usability of the analytical results and compliance relative to the SW-846 methods utilized by the laboratory.

### **Summary**

The analytical results and associated laboratory quality control (QC) samples were reviewed to determine the integrity of the reported analytical results and to ensure that the data met the established data quality objectives. This QA review includes all samples in Eurofins Sample Delivery Group (SDG) 240-181640-1.

The samples that have undergone Stage 2 data validation are listed below:

Sample Identification	Laboratory Sample Identification	Sample Delivery Group	Matrix	Date Sample Collected	Parameter Examined
MW-10_20230309	240-181640-1	240-181640-1	Aq	3/9/23	VOC, SVOC
MW-3_20230309	240-181640-2	240-181640-1	Aq	3/9/23	VOC, SVOC
MW FD_20230309 (Field Duplicate of MW-3_20230309)	240-181640-3	240-181640-1	Aq	3/9/23	VOC, SVOC
TRIP BLANK (Trip Blank)	240-181640-4	240-181640-1	Aq	3/9/23	VOC

Parameter Examined:

- VOC - Volatile Organic Compounds by SW-846 Method 8260D.  
SVOC - Semivolatile Organic Compounds by SW-846 Method 8270E.  
Aq - Aqueous

<b>Items Reviewed</b>	
Chain-of-Custody (COC) Record and Case Narrative	Matrix Spike and Matrix Spike Duplicate (MS/MSD) Results and Precision Results
Holding Times	Surrogate Recoveries
Blank Results	Laboratory Control Sample (LCS) Results
Reported Between the Method Detection Limit (MDL) and Reporting Limit (RL)	Sample Preservation and Condition Upon Laboratory Receipt
Field Duplicate Results	

### **Comments**

1. Eurofins provided the Level 2 analytical report and electronic data deliverable (EDD) on March 12, 2023; and a revised Level 2 analytical report and EDD on March 13, 2023.
2. It was noted that Arcadis appended the SDG number to the sample identification (ID) TRIP BLANK to create a unique sample ID in the database. The sample ID referenced in the Level 2 analytical report and in this data validation report is consistent with the COC Record.
3. Eurofins documented the following on the Sample Receipt Form, “*2x 250 Amber unpreserved bottles are not labeled for MWFD\_20230309. All other ambers are correctly labeled. By process of elimination, the unlabeled jars are MWFD.*” This process was concurred by the data reviewer, who additionally noted that acceptable field duplicate precision was observed (see Comment #3).
4. One field duplicate pair, samples MW-3\_20230309 and its field duplicate, MW FD\_20230309; were collected and analyzed for VOCs and SVOCs with this data set. Acceptable precision and sample representativeness were observed between the field duplicate pair.
5. Initial and continuing calibration verification data were not included in the Level 2 analytical report and are not part of Stage 2 data validation; however, the Case Narrative noted compounds that were outside of acceptance criteria. Based on the Level 2 report received and the Stage 2 validation performed, qualification of data was not applied due to the Case Narrative comments.
6. Eurofins documented the following in the Case Narrative, “*The RL for Hexachlorobenzene is below the low point of the calibration. The RL is supported by the MDL.*” The data reviewer noted positive detections for hexachlorobenzene were not observed.
7. The COC Record reported the field duplicate sample ID as “MW FD\_2020309”; however, the laboratory logged this sample as “MW-FD\_20230309”. Due to the minor difference in the sample IDs, a revision was not requested. This data validation report is consistent with the COC Record.

Based on the items included in this QA review, the following qualifier is offered.

- All positive results reported between the MDL and RL should be considered estimated and have been flagged "J" on the data tables. (Reason Code RL)

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Review performed by:  
Review reviewed by:  
Review approved by:  
Date review completed:

Jared K. Acker, Senior Quality Assurance Chemist  
Alyssa M. Reed, Senior Quality Assurance Chemist  
Erin E. Rodgers, Principal Chemist /Project Manager  
3/16/23



## **DATA QUALIFIERS**

- U This result should be considered “not-detected” because it was not detected above the detection limit or it was detected in a field blank or laboratory blank at a similar level.
- R Unreliable positive or non-detect result; analyte may or may not be present in sample.
- J Quantitation is approximate due to limitations identified during data validation.
- UJ This analyte was not detected, but the reporting limit may or may not be higher due to a bias identified during data validation.
- NJ The analysis indicates the presence of a compound that has been “tentatively identified” and the associated numerical value represents its approximate concentration.

## **REASON CODES AND EXPLANATIONS**

Reason Code <sup>1</sup>	Description
<i><sup>1</sup> For any Reason Code that does not indicate that the potential bias is indeterminate, the "+" or "-" reason code may be appended to the qualification reason code in order to indicate a direction of bias (e.g., MS+ would be used to indicate potential high bias due to a high matrix spike recovery)</i>	
+	The associated quality control item indicates a potential high bias in the sample result
-	The associated quality control item indicates a potential low bias in the sample result
AST	Compound not quantitated against an authentic standard; potential bias indeterminate
BE	Contamination present in an equipment blank; evaluation criteria exceeded
BF	Contamination present in a field blank (e.g., Field Blank, <i>-etc.</i> ); evaluation criteria exceeded
BL	Contamination present in a laboratory blank (e.g., Method Blank, Instrument Blank, <i>etc.</i> ); evaluation criteria exceeded
BN	Elevated detection limit or estimated result due to negative instrument drift (e.g., negative instrument blank result with an absolute value > 2× the method detection limit)
C	Initial and/or Continuing calibration issue
CC	Possible contamination due to carryover from a previous sample
CR	Calculated result in which one or more of the components has been qualified
CRQ	Calculated result flagged due to reporting protocol
CT	Cooler temperature criteria not met
E	Result exceeds calibration range
EP	Estimated Maximum Possible Concentration (EMPC)
FD	Field duplicate imprecision; potential bias indeterminate
FG	Total versus dissolved imprecision
FP	Target compound identification criteria not met; potential false positive
H	Holding time exceeded
HV	Headspace present in volatile vials
IR	Interference check standard evaluation criteria not met
I	Internal standard evaluation criteria not met
LB	Composition (linear/branched) of the PFAS analyte in the sample is significantly different than the composition (linear/branched) of the PFAS analyte in the calibration standards used for quantitation, potential bias indeterminate
L	Laboratory control sample/laboratory control sample duplicate recovery criteria not met
LP	Laboratory control sample/laboratory control sample duplicate precision criteria not met; potential bias indeterminate
LD	Laboratory duplicate precision criteria not met; potential bias indeterminate
LM	The lock mass selected ion current profiles indicate that ion suppression is evident
LR	Linear range exceeded; potential bias indeterminate

<b>Reason Code<sup>1</sup></b>	<b>Description</b>
M	Matrix spike/matrix spike duplicate recovery criteria not met
MDP	Laboratory deviated from the method for a method-defined parameter, based on regulatory requirements
MP	Matrix spike/matrix spike duplicate precision criteria not met; potential bias indeterminate
NQC	Absence of supporting quality control samples
P	Post-digestion spike recovery criteria not met
PM	Performance evaluation mixture criteria not met
PT	Chromatographic pattern in sample does not match pattern of calibration standard
Q	Chemical preservation issue
QCI	Quantitation/confirmation ion ratios in sample are inconsistent with reference spectra; potential bias indeterminate
QCP	Quantitation/qualification ion transition ratio did not meet criteria; potential bias indeterminate
RA	Replicate/multiple analyses criteria not met; potential bias indeterminate
RL	The analysis meets all qualitative identification criteria, but the measured concentration is between the method detection limit and the quantitation or reporting limit; potential bias indeterminate
RM	Reference material recovery criteria not met
R	Reporting limit standard(s) outside of acceptance limits
S	Surrogate recovery criteria not met
SA	Method of standard additions criteria not met; potential bias indeterminate
SC	Relative percent difference between two columns exceeds criteria; potential bias indeterminate
SCC	Second column confirmation was not performed as required by the analysis method
SD	Serial dilution results did not meet evaluation criteria
SS	Second source calibration verification/initial calibration verification criteria not met
ST	Sample container type incorrect
SW	Sample switch suspected
T	Temperature preservation issue
TIC	Tentatively identified compound, quantified using an assumed calibration factor; potential bias indeterminate
TN	Instrument tune criteria not met
X	Percent solids < 30%
Y	Potential bias due to the y-intercept in the calibration curve significantly affecting the analyte response
Z	ICP or ICP/MS interference
ZZ	Other

**SECTION 2**

**ANALYTICAL RESULTS**

		<b>Lab Sample ID</b>	240-181640-1							240-181640-2								
		<b>Sample Name</b>	MW-10_20230309							MW-3_20230309								
		<b>Sample Date</b>	3/9/2023 12:20:00 PM							3/9/2023 4:00:00 PM								
		<b>Sample Type</b>	N							N								
		<b>% Moisture</b>	100							100								
Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8260D	100-41-4	Ethylbenzene	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes
	100-42-5	Styrene (Monomer)	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	10061-01-5	cis-1,3-Dichloropropene	N	mg/l		U		0.0010	0.00061	1	Yes		U		0.0010	0.00061	1	Yes
	10061-02-6	trans-1,3-Dichloropropene	N	mg/l		U		0.0010	0.00067	1	Yes		U		0.0010	0.00067	1	Yes
	103-11-7	2-Ethylhexyl acrylate	N	mg/l		U		0.010	0.0033	1	Yes		U		0.010	0.0033	1	Yes
	106-46-7	1,4-Dichlorobenzene	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	106-93-4	1,2-Dibromoethane	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	107-06-2	1,2-Dichloroethane	N	mg/l		U		0.0010	0.00021	1	Yes		U		0.0010	0.00021	1	Yes
	108-10-1	4-Methyl-2-Pentanone	N	mg/l		U		0.010	0.00099	1	Yes		U		0.010	0.00099	1	Yes
	108-87-2	Methylcyclohexane	N	mg/l		U		0.0010	0.00033	1	Yes		U		0.0010	0.00033	1	Yes
	108-88-3	Toluene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	108-90-7	Chlorobenzene	N	mg/l		U		0.0010	0.00038	1	Yes		U		0.0010	0.00038	1	Yes
	110-82-7	Cyclohexane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	120-82-1	1,2,4-Trichlorobenzene	N	mg/l		U		0.0010	0.00077	1	Yes		U		0.0010	0.00077	1	Yes
	124-48-1	Chlorodibromomethane	N	mg/l		U		0.0010	0.00039	1	Yes		U		0.0010	0.00039	1	Yes
	127-18-4	Tetrachloroethylene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	1330-20-7	Total Xylenes	N	mg/l		U		0.0020	0.00042	1	Yes		U		0.0020	0.00042	1	Yes
	141-32-2	Butyl Acrylate	N	mg/l		U		0.010	0.0023	1	Yes		U		0.010	0.0023	1	Yes
	156-59-2	cis-1,2-Dichloroethene	N	mg/l		U		0.0010	0.00046	1	Yes		U		0.0010	0.00046	1	Yes
	156-60-5	trans-1,2-Dichloroethene	N	mg/l		U		0.0010	0.00051	1	Yes		U		0.0010	0.00051	1	Yes
	1634-04-4	Methyl-tert-butylether	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	541-73-1	1,3-Dichlorobenzene	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	56-23-5	Carbon Tetrachloride	N	mg/l		U		0.0010	0.00026	1	Yes		U		0.0010	0.00026	1	Yes
	591-78-6	Methyl N-Butyl Ketone (2-Hexanone)	N	mg/l		U		0.010	0.0011	1	Yes		U		0.010	0.0011	1	Yes
	67-64-1	Acetone	N	mg/l		U		0.010	0.0054	1	Yes		U		0.010	0.0054	1	Yes
	67-66-3	Chloroform	N	mg/l		U		0.0010	0.00047	1	Yes	0.00065	J	RL	0.0010	0.00047	1	Yes
	71-43-2	Benzene	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes

Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8260D	71-55-6	1,1,1-Trichloroethane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	74-83-9	Bromomethane	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes
	74-87-3	Chloromethane	N	mg/l		U		0.0010	0.00063	1	Yes		U		0.0010	0.00063	1	Yes
	75-00-3	Chloroethane	N	mg/l		U		0.0010	0.00083	1	Yes		U		0.0010	0.00083	1	Yes
	75-01-4	Vinyl chloride	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	75-09-2	Dichloromethane	N	mg/l		U		0.0050	0.0026	1	Yes		U		0.0050	0.0026	1	Yes
	75-15-0	Carbon Disulfide	N	mg/l		U		0.0010	0.00059	1	Yes		U		0.0010	0.00059	1	Yes
	75-25-2	Bromoform	N	mg/l		U		0.0010	0.00076	1	Yes		U		0.0010	0.00076	1	Yes
	75-27-4	Bromodichloromethane	N	mg/l		U		0.0010	0.00017	1	Yes	0.00021	J	RL	0.0010	0.00017	1	Yes
	75-34-3	1,1-Dichloroethane	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	75-35-4	1,1-Dichloroethene	N	mg/l		U		0.0010	0.00049	1	Yes		U		0.0010	0.00049	1	Yes
	75-69-4	CFC-11	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	75-71-8	CFC-12	N	mg/l		U		0.0010	0.00035	1	Yes		U		0.0010	0.00035	1	Yes
	76-13-1	1,1,2-trichloro-1,2,2-trifluoroethane	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	78-87-5	1,2-Dichloropropane	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	78-93-3	2-Butanone (MEK)	N	mg/l		U		0.010	0.0012	1	Yes		U		0.010	0.0012	1	Yes
	79-00-5	1,1,2-Trichloroethane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	79-01-6	Trichloroethene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	79-20-9	Methyl Acetate	N	mg/l		U		0.010	0.0017	1	Yes		U		0.010	0.0017	1	Yes
	79-34-5	1,1,2,2-Tetrachloroethane	N	mg/l		U		0.0010	0.00060	1	Yes		U		0.0010	0.00060	1	Yes
	95-50-1	1,2-Dichlorobenzene	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	96-12-8	1,2-Dibromo-3-chloropropane	N	mg/l		U		0.0020	0.00091	1	Yes		U		0.0020	0.00091	1	Yes
	96-33-3	Methyl Acrylate	N	mg/l		U		0.0020	0.00062	1	Yes		U		0.0020	0.00062	1	Yes
	98-82-8	Isopropylbenzene	N	mg/l		U		0.0010	0.00049	1	Yes		U		0.0010	0.00049	1	Yes
SW8270E	100-01-6	4-Nitroaniline	N	mg/l		U		0.0019	0.00088	1	Yes		U		0.0019	0.00088	1	Yes
	100-02-7	4-Nitrophenol	N	mg/l		U		0.0096	0.0021	1	Yes		U		0.0096	0.0021	1	Yes
	100-52-7	Benzaldehyde	N	mg/l		U		0.0019	0.00073	1	Yes		U		0.0019	0.00073	1	Yes
	101-55-3	4-Bromophenyl phenyl ether	N	mg/l		U		0.0019	0.00048	1	Yes		U		0.0019	0.00048	1	Yes

					Lab Sample ID	240-181640-1					240-181640-2							
					Sample Name	MW-10_20230309					MW-3_20230309							
					Sample Date	3/9/2023 12:20:00 PM					3/9/2023 4:00:00 PM							
					Sample Type	N					N							
					% Moisture	100					100							
Analytic Method	CAS Rn	Chemical Name	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	105-60-2	Caprolactam	N	mg/l		U		0.0048	0.00090	1	Yes		U		0.0048	0.00090	1	Yes
	105-67-9	2,4-Dimethylphenol	N	mg/l		U		0.0019	0.00050	1	Yes		U		0.0019	0.00050	1	Yes
	106-47-8	p-Chloroaniline	N	mg/l		U		0.0019	0.00030	1	Yes		U		0.0019	0.00030	1	Yes
	108-60-1	2,2-Oxybis(1-Chloropropane)	N	mg/l		U		0.00096	0.00053	1	Yes		U		0.00096	0.00053	1	Yes
	108-95-2	Phenol	N	mg/l		U		0.00096	0.00012	1	Yes		U		0.00096	0.00012	1	Yes
	111-44-4	bis(2-Chloroethyl)ether	N	mg/l		U		0.00096	0.00039	1	Yes		U		0.00096	0.00039	1	Yes
	111-76-2	Ethylene glycol, monobutyl ether	N	mg/l		U		0.0038	0.0010	1	Yes		U		0.0038	0.0010	1	Yes
	111-91-1	bis(2-Chloroethoxy)methane	N	mg/l		U		0.00096	0.00044	1	Yes		U		0.00096	0.00044	1	Yes
	117-81-7	bis(2-Ethylhexyl)phthalate	N	mg/l		U		0.0048	0.0021	1	Yes		U		0.0048	0.0021	1	Yes
	117-84-0	Di-n-octyl phthalate	N	mg/l		U		0.0019	0.00079	1	Yes		U		0.0019	0.00079	1	Yes
	118-74-1	Hexachlorobenzene	N	mg/l		U		0.00019	0.00015	1	Yes		U		0.00019	0.00015	1	Yes
	120-12-7	Anthracene	N	mg/l		U		0.00019	0.00013	1	Yes		U		0.00019	0.00013	1	Yes
	120-83-2	2,4-Dichlorophenol	N	mg/l		U		0.0019	0.00025	1	Yes		U		0.0019	0.00025	1	Yes
	121-14-2	2,4-Dinitrotoluene	N	mg/l		U		0.0048	0.0020	1	Yes		U		0.0048	0.0020	1	Yes
	129-00-0	Pyrene	N	mg/l		U		0.00019	0.00017	1	Yes		U		0.00019	0.00017	1	Yes
	131-11-3	Dimethyl phthalate	N	mg/l		U		0.0019	0.00050	1	Yes		U		0.0019	0.00050	1	Yes
	132-64-9	Dibenzofuran	N	mg/l		U		0.00096	0.00054	1	Yes		U		0.00096	0.00054	1	Yes
	1912-24-9	Atrazine	N	mg/l		U		0.0019	0.00092	1	Yes		U		0.0019	0.00092	1	Yes
	191-24-2	Benzo(g,h,i)perylene	N	mg/l		U		0.00019	0.00017	1	Yes		U		0.00019	0.00017	1	Yes
	193-39-5	Indeno(1,2,3-cd)pyrene	N	mg/l		U		0.00019	0.00013	1	Yes		U		0.00019	0.00013	1	Yes
	205-99-2	Benzo(b)fluoranthene	N	mg/l		U		0.00019	0.00015	1	Yes		U		0.00019	0.00015	1	Yes
	206-44-0	Fluoranthene	N	mg/l		U		0.00019	0.00015	1	Yes		U		0.00019	0.00015	1	Yes
	207-08-9	Benzo(k)fluoranthene	N	mg/l		U		0.00019	0.00013	1	Yes		U		0.00019	0.00013	1	Yes
	208-96-8	Acenaphthylene	N	mg/l		U		0.00019	0.00012	1	Yes		U		0.00019	0.00012	1	Yes
	218-01-9	Chrysene	N	mg/l		U		0.00019	0.00018	1	Yes		U		0.00019	0.00018	1	Yes
	50-32-8	Benzo(a)pyrene	N	mg/l		U		0.00019	0.00017	1	Yes		U		0.00019	0.00017	1	Yes
	51-28-5	2,4-Dinitrophenol	N	mg/l		U		0.0096	0.0060	1	Yes		U		0.0096	0.0060	1	Yes

Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	534-52-1	2-Methyl-4,6-dinitrophenol	N	mg/l		U		0.0048	0.0027	1	Yes		U		0.0048	0.0027	1	Yes
	53-70-3	Dibenz(a,h)anthracene	N	mg/l		U		0.00019	0.00015	1	Yes		U		0.00019	0.00015	1	Yes
	56-55-3	Benz(a)anthracene	N	mg/l		U		0.00019	0.00016	1	Yes		U		0.00019	0.00016	1	Yes
	59-50-7	4-Chloro-3-Methylphenol	N	mg/l		U		0.0019	0.00028	1	Yes		U		0.0019	0.00028	1	Yes
	606-20-2	2,6-Dinitrotoluene	N	mg/l		U		0.0048	0.0020	1	Yes		U		0.0048	0.0020	1	Yes
	621-64-7	N-Nitrosodi-n-propylamine	N	mg/l		U		0.00096	0.00024	1	Yes		U		0.00096	0.00024	1	Yes
	65794-96-9	3-Methylphenol, 4-Methylphenol	N	mg/l		U		0.0019	0.00018	1	Yes		U		0.0019	0.00018	1	Yes
	67-72-1	Hexachloroethane	N	mg/l		U		0.00096	0.00038	1	Yes		U		0.00096	0.00038	1	Yes
	7005-72-3	4-Chlorophenyl phenyl ether	N	mg/l		U		0.0019	0.00053	1	Yes		U		0.0019	0.00053	1	Yes
	77-47-4	Hexachlorocyclopentadiene	N	mg/l		U		0.0096	0.0017	1	Yes		U		0.0096	0.0017	1	Yes
	78-59-1	Isophorone	N	mg/l		U		0.00096	0.00031	1	Yes		U		0.00096	0.00031	1	Yes
	83-32-9	Acenaphthene	N	mg/l		U		0.00019	0.00017	1	Yes		U		0.00019	0.00017	1	Yes
	84-66-2	Diethyl phthalate	N	mg/l		U		0.0048	0.0037	1	Yes		U		0.0048	0.0037	1	Yes
	84-74-2	Di-n-butyl phthalate	N	mg/l		U		0.0048	0.0017	1	Yes		U		0.0048	0.0017	1	Yes
	85-01-8	Phenanthrene	N	mg/l		U		0.00019	0.00016	1	Yes		U		0.00019	0.00016	1	Yes
	85-68-7	Butyl benzyl phthalate	N	mg/l		U		0.0019	0.00064	1	Yes		U		0.0019	0.00064	1	Yes
	86-30-6	N-Nitrosodiphenylamine	N	mg/l		U		0.00096	0.00042	1	Yes		U		0.00096	0.00042	1	Yes
	86-73-7	Fluorene	N	mg/l		U		0.00019	0.00016	1	Yes		U		0.00019	0.00016	1	Yes
	86-74-8	Carbazole	N	mg/l		U		0.00096	0.00047	1	Yes		U		0.00096	0.00047	1	Yes
	87-68-3	Hexachloro-1,3-butadiene	N	mg/l		U		0.00096	0.00052	1	Yes		U		0.00096	0.00052	1	Yes
	87-86-5	Pentachlorophenol	N	mg/l		U		0.0096	0.0030	1	Yes		U		0.0096	0.0030	1	Yes
	88-06-2	2,4,6-Trichlorophenol	N	mg/l		U		0.0048	0.0017	1	Yes		U		0.0048	0.0017	1	Yes
	88-74-4	2-Nitroaniline	N	mg/l		U		0.0019	0.00049	1	Yes		U		0.0019	0.00049	1	Yes
	88-75-5	2-Nitrophenol	N	mg/l		U		0.0019	0.00054	1	Yes		U		0.0019	0.00054	1	Yes
	91-20-3	Naphthalene	N	mg/l		U		0.00019	0.00010	1	Yes		U		0.00019	0.00010	1	Yes
	91-57-6	2-Methylnaphthalene	N	mg/l		U		0.00019	0.00011	1	Yes		U		0.00019	0.00011	1	Yes
	91-58-7	2-Chloronaphthalene	N	mg/l		U		0.00096	0.00046	1	Yes		U		0.00096	0.00046	1	Yes

				<b>Lab Sample ID</b>	240-181640-1						240-181640-2							
				<b>Sample Name</b>	MW-10_20230309						MW-3_20230309							
				<b>Sample Date</b>	3/9/2023 12:20:00 PM						3/9/2023 4:00:00 PM							
				<b>Sample Type</b>	N						N							
				<b>% Moisture</b>	100						100							
Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	91-94-1	3,3-Dichlorobenzidine	N	mg/l		U		0.0048	0.0011	1	Yes		U		0.0048	0.0011	1	Yes
	92-52-4	1,1-Biphenyl	N	mg/l		U		0.00096	0.00047	1	Yes		U		0.00096	0.00047	1	Yes
	95-48-7	2-Methylphenol	N	mg/l		U		0.00096	0.00020	1	Yes		U		0.00096	0.00020	1	Yes
	95-57-8	2-Chlorophenol	N	mg/l		U		0.00096	0.00026	1	Yes		U		0.00096	0.00026	1	Yes
	95-95-4	2,4,5-Trichlorophenol	N	mg/l		U		0.0048	0.0019	1	Yes		U		0.0048	0.0019	1	Yes
	98-86-2	Acetophenone	N	mg/l		U		0.00096	0.00035	1	Yes		U		0.00096	0.00035	1	Yes
	98-95-3	Nitrobenzene	N	mg/l		U		0.00096	0.00049	1	Yes		U		0.00096	0.00049	1	Yes
	99-09-2	3-Nitroaniline	N	mg/l		U		0.0019	0.00054	1	Yes		U		0.0019	0.00054	1	Yes

		<b>Lab Sample ID</b>	240-181640-3						240-181640-4									
		<b>Sample Name</b>	MW-FD_20230309						TRIP BLANK_240-181640-1									
		<b>Sample Date</b>	3/9/2023 12:00:00 AM						3/9/2023 12:00:00 AM									
		<b>Sample Type</b>	FD						TB									
		<b>% Moisture</b>	100						100									
Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8260D	100-41-4	Ethylbenzene	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes
	100-42-5	Styrene (Monomer)	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	10061-01-5	cis-1,3-Dichloropropene	N	mg/l		U		0.0010	0.00061	1	Yes		U		0.0010	0.00061	1	Yes
	10061-02-6	trans-1,3-Dichloropropene	N	mg/l		U		0.0010	0.00067	1	Yes		U		0.0010	0.00067	1	Yes
	103-11-7	2-Ethylhexyl acrylate	N	mg/l		U		0.010	0.0033	1	Yes		U		0.010	0.0033	1	Yes
	106-46-7	1,4-Dichlorobenzene	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	106-93-4	1,2-Dibromoethane	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	107-06-2	1,2-Dichloroethane	N	mg/l		U		0.0010	0.00021	1	Yes		U		0.0010	0.00021	1	Yes
	108-10-1	4-Methyl-2-Pentanone	N	mg/l		U		0.010	0.00099	1	Yes		U		0.010	0.00099	1	Yes
	108-87-2	Methylcyclohexane	N	mg/l		U		0.0010	0.00033	1	Yes		U		0.0010	0.00033	1	Yes
	108-88-3	Toluene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	108-90-7	Chlorobenzene	N	mg/l		U		0.0010	0.00038	1	Yes		U		0.0010	0.00038	1	Yes
	110-82-7	Cyclohexane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	120-82-1	1,2,4-Trichlorobenzene	N	mg/l		U		0.0010	0.00077	1	Yes		U		0.0010	0.00077	1	Yes
	124-48-1	Chlorodibromomethane	N	mg/l		U		0.0010	0.00039	1	Yes		U		0.0010	0.00039	1	Yes
	127-18-4	Tetrachloroethene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	1330-20-7	Total Xylenes	N	mg/l		U		0.0020	0.00042	1	Yes		U		0.0020	0.00042	1	Yes
	141-32-2	Butyl Acrylate	N	mg/l		U		0.010	0.0023	1	Yes		U		0.010	0.0023	1	Yes
	156-59-2	cis-1,2-Dichloroethene	N	mg/l		U		0.0010	0.00046	1	Yes		U		0.0010	0.00046	1	Yes
	156-60-5	trans-1,2-Dichloroethene	N	mg/l		U		0.0010	0.00051	1	Yes		U		0.0010	0.00051	1	Yes
	1634-04-4	Methyl-tert-butylether	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	541-73-1	1,3-Dichlorobenzene	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	56-23-5	Carbon Tetrachloride	N	mg/l		U		0.0010	0.00026	1	Yes		U		0.0010	0.00026	1	Yes
	591-78-6	Methyl N-Butyl Ketone (2-Hexanone)	N	mg/l		U		0.010	0.0011	1	Yes		U		0.010	0.0011	1	Yes
	67-64-1	Acetone	N	mg/l		U		0.010	0.0054	1	Yes		U		0.010	0.0054	1	Yes
	67-66-3	Chloroform	N	mg/l	0.00068	J	RL	0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	71-43-2	Benzene	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes
	71-55-6	1,1,1-Trichloroethane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes

Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8260D	74-83-9	Bromomethane	N	mg/l		U		0.0010	0.00042	1	Yes		U		0.0010	0.00042	1	Yes
	74-87-3	Chloromethane	N	mg/l		U		0.0010	0.00063	1	Yes		U		0.0010	0.00063	1	Yes
	75-00-3	Chloroethane	N	mg/l		U		0.0010	0.00083	1	Yes		U		0.0010	0.00083	1	Yes
	75-01-4	Vinyl chloride	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	75-09-2	Dichloromethane	N	mg/l		U		0.0050	0.0026	1	Yes		U		0.0050	0.0026	1	Yes
	75-15-0	Carbon Disulfide	N	mg/l		U		0.0010	0.00059	1	Yes		U		0.0010	0.00059	1	Yes
	75-25-2	Bromoform	N	mg/l		U		0.0010	0.00076	1	Yes		U		0.0010	0.00076	1	Yes
	75-27-4	Bromodichloromethane	N	mg/l	0.00023	J	RL	0.0010	0.00017	1	Yes		U		0.0010	0.00017	1	Yes
	75-34-3	1,1-Dichloroethane	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	75-35-4	1,1-Dichloroethene	N	mg/l		U		0.0010	0.00049	1	Yes		U		0.0010	0.00049	1	Yes
	75-69-4	CFC-11	N	mg/l		U		0.0010	0.00045	1	Yes		U		0.0010	0.00045	1	Yes
	75-71-8	CFC-12	N	mg/l		U		0.0010	0.00035	1	Yes		U		0.0010	0.00035	1	Yes
	76-13-1	1,1,2-trichloro-1,2,2-trifluoroethane	N	mg/l		U		0.0010	0.00041	1	Yes		U		0.0010	0.00041	1	Yes
	78-87-5	1,2-Dichloropropane	N	mg/l		U		0.0010	0.00047	1	Yes		U		0.0010	0.00047	1	Yes
	78-93-3	2-Butanone (MEK)	N	mg/l		U		0.010	0.0012	1	Yes		U		0.010	0.0012	1	Yes
	79-00-5	1,1,2-Trichloroethane	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	79-01-6	Trichloroethene	N	mg/l		U		0.0010	0.00044	1	Yes		U		0.0010	0.00044	1	Yes
	79-20-9	Methyl Acetate	N	mg/l		U		0.010	0.0017	1	Yes		U		0.010	0.0017	1	Yes
	79-34-5	1,1,2,2-Tetrachloroethane	N	mg/l		U		0.0010	0.00060	1	Yes		U		0.0010	0.00060	1	Yes
	95-50-1	1,2-Dichlorobenzene	N	mg/l		U		0.0010	0.00048	1	Yes		U		0.0010	0.00048	1	Yes
	96-12-8	1,2-Dibromo-3-chloropropane	N	mg/l		U		0.0020	0.00091	1	Yes		U		0.0020	0.00091	1	Yes
	96-33-3	Methyl Acrylate	N	mg/l		U		0.0020	0.00062	1	Yes		U		0.0020	0.00062	1	Yes
	98-82-8	Isopropylbenzene	N	mg/l		U		0.0010	0.00049	1	Yes		U		0.0010	0.00049	1	Yes
SW8270E	100-01-6	4-Nitroaniline	N	mg/l		U		0.0019	0.00088	1	Yes							
	100-02-7	4-Nitrophenol	N	mg/l		U		0.0096	0.0021	1	Yes							
	100-52-7	Benzaldehyde	N	mg/l		U		0.0019	0.00073	1	Yes							
	101-55-3	4-Bromophenyl phenyl ether	N	mg/l		U		0.0019	0.00048	1	Yes							
	105-60-2	Caprolactam	N	mg/l		U		0.0048	0.00090	1	Yes							

					Lab Sample ID	240-181640-3					240-181640-4									
					Sample Name	MW-FD_20230309					TRIP BLANK_240-181640-1									
					Sample Date	3/9/2023 12:00:00 AM					3/9/2023 12:00:00 AM									
					Sample Type	FD					TB									
					% Moisture	100					100									
Analytic Method	CAS Rn	Chemical Name	Fraction	Result Unit		Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?		Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	105-67-9	2,4-Dimethylphenol	N	mg/l			U		0.0019	0.00050	1	Yes								
	106-47-8	p-Chloroaniline	N	mg/l			U		0.0019	0.00030	1	Yes								
	108-60-1	2,2-Oxybis(1-Chloropropane)	N	mg/l			U		0.00096	0.00053	1	Yes								
	108-95-2	Phenol	N	mg/l			U		0.00096	0.00012	1	Yes								
	111-44-4	bis(2-Chloroethyl)ether	N	mg/l			U		0.00096	0.00039	1	Yes								
	111-76-2	Ethylene glycol, monobutyl ether	N	mg/l			U		0.0038	0.0010	1	Yes								
	111-91-1	bis(2-Chloroethoxy)methane	N	mg/l			U		0.00096	0.00044	1	Yes								
	117-81-7	bis(2-Ethylhexyl)phthalate	N	mg/l			U		0.0048	0.0021	1	Yes								
	117-84-0	Di-n-octyl phthalate	N	mg/l			U		0.0019	0.00079	1	Yes								
	118-74-1	Hexachlorobenzene	N	mg/l			U		0.00019	0.00015	1	Yes								
	120-12-7	Anthracene	N	mg/l			U		0.00019	0.00013	1	Yes								
	120-83-2	2,4-Dichlorophenol	N	mg/l			U		0.0019	0.00025	1	Yes								
	121-14-2	2,4-Dinitrotoluene	N	mg/l			U		0.0048	0.0020	1	Yes								
	129-00-0	Pyrene	N	mg/l			U		0.00019	0.00017	1	Yes								
	131-11-3	Dimethyl phthalate	N	mg/l			U		0.0019	0.00050	1	Yes								
	132-64-9	Dibenzofuran	N	mg/l			U		0.00096	0.00054	1	Yes								
	1912-24-9	Atrazine	N	mg/l			U		0.0019	0.00092	1	Yes								
	191-24-2	Benzo(g,h,i)perylene	N	mg/l			U		0.00019	0.00017	1	Yes								
	193-39-5	Indeno(1,2,3-cd)pyrene	N	mg/l			U		0.00019	0.00013	1	Yes								
	205-99-2	Benzo(b)fluoranthene	N	mg/l			U		0.00019	0.00015	1	Yes								
	206-44-0	Fluoranthene	N	mg/l			U		0.00019	0.00015	1	Yes								
	207-08-9	Benzo(k)fluoranthene	N	mg/l			U		0.00019	0.00013	1	Yes								
	208-96-8	Acenaphthylene	N	mg/l			U		0.00019	0.00012	1	Yes								
	218-01-9	Chrysene	N	mg/l			U		0.00019	0.00018	1	Yes								
	50-32-8	Benzo(a)pyrene	N	mg/l			U		0.00019	0.00017	1	Yes								
	51-28-5	2,4-Dinitrophenol	N	mg/l			U		0.0096	0.0060	1	Yes								
	534-52-1	2-Methyl-4,6-dinitrophenol	N	mg/l			U		0.0048	0.0027	1	Yes								

					Lab Sample ID	240-181640-3					240-181640-4							
					Sample Name	MW-FD_20230309					TRIP BLANK_240-181640-1							
					Sample Date	3/9/2023 12:00:00 AM					3/9/2023 12:00:00 AM							
					Sample Type	FD					TB							
					% Moisture	100					100							
Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	53-70-3	Dibenz(a,h)anthracene	N	mg/l		U		0.00019	0.00015	1	Yes							
	56-55-3	Benz(a)anthracene	N	mg/l		U		0.00019	0.00016	1	Yes							
	59-50-7	4-Chloro-3-Methylphenol	N	mg/l		U		0.0019	0.00028	1	Yes							
	606-20-2	2,6-Dinitrotoluene	N	mg/l		U		0.0048	0.0020	1	Yes							
	621-64-7	N-Nitrosodi-n-propylamine	N	mg/l		U		0.00096	0.00024	1	Yes							
	65794-96-9	3-Methylphenol, 4-Methylphenol	N	mg/l		U		0.0019	0.00018	1	Yes							
	67-72-1	Hexachloroethane	N	mg/l		U		0.00096	0.00038	1	Yes							
	7005-72-3	4-Chlorophenyl phenyl ether	N	mg/l		U		0.0019	0.00053	1	Yes							
	77-47-4	Hexachlorocyclopentadiene	N	mg/l		U		0.0096	0.0017	1	Yes							
	78-59-1	Isophorone	N	mg/l		U		0.00096	0.00031	1	Yes							
	83-32-9	Acenaphthene	N	mg/l		U		0.00019	0.00017	1	Yes							
	84-66-2	Diethyl phthalate	N	mg/l		U		0.0048	0.0037	1	Yes							
	84-74-2	Di-n-butyl phthalate	N	mg/l		U		0.0048	0.0017	1	Yes							
	85-01-8	Phenanthrene	N	mg/l		U		0.00019	0.00016	1	Yes							
	85-68-7	Butyl benzyl phthalate	N	mg/l		U		0.0019	0.00064	1	Yes							
	86-30-6	N-Nitrosodiphenylamine	N	mg/l		U		0.00096	0.00042	1	Yes							
	86-73-7	Fluorene	N	mg/l		U		0.00019	0.00016	1	Yes							
	86-74-8	Carbazole	N	mg/l		U		0.00096	0.00047	1	Yes							
	87-68-3	Hexachloro-1,3-butadiene	N	mg/l		U		0.00096	0.00052	1	Yes							
	87-86-5	Pentachlorophenol	N	mg/l		U		0.0096	0.0030	1	Yes							
	88-06-2	2,4,6-Trichlorophenol	N	mg/l		U		0.0048	0.0017	1	Yes							
	88-74-4	2-Nitroaniline	N	mg/l		U		0.0019	0.00049	1	Yes							
	88-75-5	2-Nitrophenol	N	mg/l		U		0.0019	0.00054	1	Yes							
	91-20-3	Naphthalene	N	mg/l		U		0.00019	0.00010	1	Yes							
	91-57-6	2-Methylnaphthalene	N	mg/l		U		0.00019	0.00011	1	Yes							
	91-58-7	2-Chloronaphthalene	N	mg/l		U		0.00096	0.00046	1	Yes							
	91-94-1	3,3-Dichlorobenzidine	N	mg/l		U		0.0048	0.0011	1	Yes							

					Lab Sample ID	240-181640-3					240-181640-4							
					Sample Name	MW-FD_20230309					TRIP BLANK_240-181640-1							
					Sample Date	3/9/2023 12:00:00 AM					3/9/2023 12:00:00 AM							
					Sample Type	FD					TB							
					% Moisture	100					100							
Analytic Method	CAS Rn	CHEMICAL NAME	Fraction	Result Unit	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?	Result	Qualifier	Reason Code	Reporting Limit	MDL	DF	Report?
SW8270E	92-52-4	1,1-Biphenyl	N	mg/l		U		0.00096	0.00047	1	Yes							
	95-48-7	2-Methylphenol	N	mg/l		U		0.00096	0.00020	1	Yes							
	95-57-8	2-Chlorophenol	N	mg/l		U		0.00096	0.00026	1	Yes							
	95-95-4	2,4,5-Trichlorophenol	N	mg/l		U		0.0048	0.0019	1	Yes							
	98-86-2	Acetophenone	N	mg/l		U		0.00096	0.00035	1	Yes							
	98-95-3	Nitrobenzene	N	mg/l		U		0.00096	0.00049	1	Yes							
	99-09-2	3-Nitroaniline	N	mg/l		U		0.0019	0.00054	1	Yes							